Jerry Zhu

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EDUCATION

Stony Brook University   Stony Brook, NY
Bachelor of Science, Computer Science   *August 2022 - May 2026*
- Coursework: Discrete Mathematics, Linear Algebra, Data Structures and Algorithms, Probability and Statistics
- Extracurriculars: Stony Brook Game Developers, Stony Brook Computing Society

VOLUNTEER EXPERIENCE

Software Development Team Lead   February 2021 - September 2022
The Environment Project   *Queens, NY*
- Led the development of Recyclopedia, a custom wiki application with 4 team members
- Maintained and redesigned the organization **WordPress** website which reached 10K visitors
- Authored the event page for the Flushing Meadows Corona Park clean-up which resulted in 111 participants
- Managed collaboration through **GitHub**, **Trello**, and bi-weekly pair-programming meetings on **Zoom** and **VS-Code**

PROJECTS

JRPG Game: Legends | *C, SDL2, Emscripten*   June 2022 - Present
- Built a multiplatform software rendered game engine in **C**, running on desktop with SDL2 and web with **Emscripten**
- Developed custom level editor, world map editor, and save formats with backwards compatibility
- Developed a custom parser for a lisp-based scripting language used for game events, cutscenes, and data
- Implemented a **SIMD** optimized **multithreaded** renderer improving framerate by 200%

UHired | *JavaScript, CSS, React.js, Express*   September 2022
- Designed and implemented the frontend for an NLP based chat application in **React.js**, **CSS**, and the **co;here** API
- Collaborated with 3 teammates for the SBUHacks hackathon which lasted 48 hours via GitHub
- Debugged the backend which was written with **Express** and fixing the webscraper to gather job listing data

2D Game Framework | *C, OpenGL, SDL2, Emscripten*   July 2021 - October 2021
- Developed a cross-platform game framework in **C** using **SDL2** and **OpenGL** targeting desktop and web with **Emscripten**
- Achieved real-time rendering for 200,000 animated sprites at 60+ FPS with an optimized spritebatcher that supports custom shaders written in **GLSL**
- Designed a memory-efficient glyph-cache that allows arbitrary Unicode text to be rendered with low performance overhead

Recyclopedia | *React.js, TypeScript, Next.js, MongoDB, Redux*   July 2021 - October 2021
- Created a custom wiki web application for The Environment Project which supports article authoring, and viewing in a single page application (S.P.A)
- Designed data-schema, and deployed **MongoDB** database for article data
- Implemented a custom in-house rich text editor, and implemented social features such as comments and voting with **React.js** and **CSS**
- Enabled static site generation through the use of **Next.js** improving website performance by eliminating database requests

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, CSS, HTML, Python, C, C++, C#, Lisp, Java
Web Frameworks: React.js, Node.js, Strapi, Next.js, co;here, Redux
Misc. Technologies: REST APIs, OpenGL, WebGL, MongoDB, Emscripten
Development Methodologies: SOLID, DRY, Design Patterns, Functional Programming
Developer Tools: Git, Mercurial, VS Code, Visual Studio, GDB, Valgrind, Eclipse, Bash, Trello, Linux